



**DESCRIPTION of COURSE ACTIVITIES:** The course grade will be based on participation in the ‘in-class exercises’, the literature review paper, and exams as described below:

- (1) *IN-CLASS EXERCISES*: During 7 of the class periods, you will be expected to participate in a class or individual learning exercise. The focus of these exercises will be on answering questions, synthesizing material, or participating in small- or large-group discussions. The activities will be either individual, small-group or whole-class discussions. These assignments will be graded as pass/fail and you must be present and participate to pass. You must complete 6 of the 7 assignments in order to receive full participation credit. In other words, if you miss OR fail more than 1 of the assignments, you will receive 0 out of the 50 participation points. However, if you miss OR fail 1 of the assignments, you will receive the full 50 points. Because these assignments are for your benefit, I encourage you to attend all class periods and complete all 7 exercises.
- (2) *LITERATURE REVIEW PAPER*: A 5-page paper will be assigned that requires you to synthesize a topic of your choice. You must use the primary literature (journal articles) to provide a current summary of a particular topic or research area. You will also be asked to submit an outline for the paper for a grade prior to writing the paper. Detailed descriptions of both assignments will be provided in the near future.
- (3) *MID-TERM EXAM*: The closed-book mid-term exam will test your knowledge of basic facts and your understanding and synthesis of class concepts. The types of questions on the exam will be similar to some of the above in-class exercises, and ~15% of the questions will be very similar to questions that have either been asked in class for small group discussions or the exercises.
- (4) *FINAL EXAM*: The closed-book final exam will be similar to the mid-term exam. However, ~1/4 of the exam will be cumulative, and ~3/4 will cover material from the last half of the course. The exam will be held in-class during the 2-hr final exam period scheduled by the University. Please note that it is your responsibility to determine well in advance (i.e., early in the semester) if you have more than 2 final exams scheduled for the same day, so that appropriate actions can be taken.
- (5) *READINGS*: The readings both supplement and reinforce the lecture material. They are required and you will be tested on them.

**CLASS ROOM BEHAVIOR AND ATTENDANCE:** I will not grade based on attendance; however, you **MUST** be present to receive ‘participation’ points on the days for which there is an ‘in-class exercise’. If you choose not to attend class on any day, then you accept the responsibility to learn the material on your own.

If you have a question during the class period, please do not hesitate to ask. In fact, other students probably have the same question. Come to lecture on time since we will start *right* away. In particular, the first 5 minutes of each lecture are quite crucial because they establish the direction for that session. Therefore, if you come in late, certain things may not make sense, and you will miss important announcements. Throughout the semester, please be courteous to all of your fellow students and to me so we can create a positive learning environment. All cell phones/beepers should be turned off before entering the classroom.

**FEEDBACK AND EVALUATION:** This course is for you to learn important fundamental concepts and ideas on which to build your understanding of aquatic ecosystems. I will do my best to create a positive learning environment. But because learning styles differ among individual students, I may do some things that are not optimal for you. If this happens, you can let me know through email or written comments handed in at the end of the class period, or during office hours. Keep in mind that I can not necessarily know that things are not going well for you unless you let me know! Because I need to keep the interest of all students in mind, I cannot promise that I will change the course, but I do promise to listen and consider your suggestions.

**ACADEMIC HONESTY:** Article 2.3.3 of the Academic Freedom Report states that “the student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards.” The College of Natural Sciences adheres to the policies on academic honesty as specified in General Student Regulations 1.0, Protection of Scholarship and Grades, and in the All-University Policy on Integrity of Scholarship and Grades, which are included in Spartan Life: Student Handbook and Resource Guide.

**I have a zero-tolerance policy for cheating.** I know that most of you are honest citizens. Cheating is not fair to yourself or to your peers. Cheating includes attempting to pass off someone else’s work as your own, using crib sheets, or providing exam answers to others. If you are not sure which activities would constitute cheating, please ask me. Students who cheat will receive a 0.0 on the assignment in question and will most likely fail the course.

**ACCOMMODATIONS FOR DISABILITIES:** If you have a disability or special need that requires accommodations, please inform me immediately, so that I can develop a plan to work with you. If you have not yet contacted the Resource Center for People with Disabilities, please call 353-9642 (voice) or 355-1293 (TTY) to make an appointment with a counselor.

## LECTURE TOPICS, IN-CLASS EXERCISES and COURSE ACTIVITIES

Date	In-class exercise	Module	Topic	READING (Day that the reading is DUE)	COURSE ACTIVITY DATES (bold refers to your Literature Review Paper)
Tue, Jan 11		<b>I</b> Introduction	Course Overview; What is limnology?		
Thu, Jan 13		Introduction	Approaches to studying limnology	<b>Ch 1:</b> Inland waters... (all pages)	
Tue, Jan 18	<b>1*</b>	<b>II</b> Predation/Grazing	Introduction to biologic interactions in lakes	--	In-class exercise*
Thu, Jan 20		Predation/Grazing	Pelagic lake organisms	<b>Ch 21:</b> The phyto. (pg 309-322, 329-331)	
Tue, Jan 25		Predation/Grazing	Adaptations by pelagic organisms to challenges in environment	<b>Ch 23:</b> The zoop. (& the ▲ sect's 23.9, 23.10, 23.14)	
Thu, Jan 27		Predation/Grazing	Biotic interactions among pelagic organisms	<b>Ch 26:</b> Fish and waterbirds (pg 451-468)	
Tue, Feb 1	<b>2</b>	Predation/Grazing	<i>Human impacts: Non-native species</i>	<b>Kolar and Lodge 2002</b>	In-class exercise*
Thu, Feb 3		<b>III</b> Foodwebs	Foodweb vs. nutrient paradigms	<b>Carpenter et al. 1985</b>	<b>Paper Topics Due</b>
Tue, Feb 8		Foodwebs	Bacteria and the microbial loop	<b>Ch 22:</b> The bacteria (pg 349-368)	[Paper topics assigned]
Thu, Feb 10		<b>IV</b> Nutrient cycles	Nitrogen and phosphorus	<b>Ch 17:</b> Phosp. (pg 247-252) <b>Ch 18:</b> Nitrogen (all pages)	
Tue, Feb 15		Nutrient cycles	<i>Human impacts: eutrophication</i> Guest: Dr. C. Stow	--	
Thu, Feb 17		Nutrient cycles	-- WORK ON PAPERS ON COMPUTER OUTSIDE OF CLASS--		<b>List of 7 articles due (send over email by 5 pm)</b>
Tue, Feb 22		-- Synthesis / Review--	<i>Review</i>	--	
Thu, Feb 24			<b>MIDTERM EXAM</b>	--	
Tue, Mar 1	<b>3</b>	<b>V</b> Vertical gradients	Physical, chemical, changes in the pelagic zones	--	In-class exercise*
Thu, Mar 3		Vertical gradients	Light and UV radiation	<b>Ch 10:</b> Light	<b>Paper outlines due</b>

				(all pages)	
Tue, Mar 8		BREAK – Enjoy!	----		
Thu, Mar 10		BREAK – Enjoy!	----		
Tue, Mar 15		Vertical gradients	Temperature and lake stratification	<b>Ch 11:</b> Temperature (pg 154-172)	
Thu, Mar 17	<b>4</b>	Vertical gradients	Dissolved oxygen	<b>Ch 15:</b> Diss. Oxygen (all pages)	In-class exercise* [Outlines returned to students]
Tue, Mar 22		Vertical gradients	Vertical nutrient gradients	<b>Ch 16:</b> Oxid-Reduction (& reread pg 247-250)	
Thu, Mar 24	<b>5</b>	Vertical gradients	Dissolved inorganic carbon	<b>Ch 14:</b> Inorganic carbon (all pages)	In-class exercise*
Tue, Mar 29		Vertical gradients	<i>Human impacts: Acid deposition</i>	<b>Ch 27:</b> Acidification (all pages)	
Thu, Mar 31		<b>VI</b> Littoral zone	Macrophyte biology/ecology	<b>Ch 24:</b> Benthic plants	
Tue, Apr 5		Littoral zone	Littoral foodwebs, Guest: E. Norton	<b>Ch 25:</b> Zoobenthos (all pages)	
Thu, Apr 7		<b>VII</b> "Other" lakes	Shallow lakes, Guest: E. Norton	TBD	
Tue, Apr 12		"Other" lakes	Reservoir limnology & tropical lakes	<b>Ch 29:</b> Reservoirs (all page)	
Thu, Apr 14		<b>VIII</b> Lakes, landscape	Lakes in the landscape	<b>Kratz et al. 1997</b>	<b>Final paper due</b>
Tue, Apr 19	<b>6</b>	Lakes, landscape	Lake classification	--	In-class exercise*
Thu, Apr 21	<b>7</b>	Lakes, landscape	Lake classification	--	In-class exercise* <i>Note, that to receive credit on this day, you must attend class on Apr 19 too</i>
Tue, Apr 26		Lakes, landscape	<i>Human impacts: Climate change effects on lakes DISCUSSION</i>	<b>IPCC Summary Report</b>	
Thu, Apr 28		-- Synthesis / Review--	Synthesis of course; review	--	[Papers returned]
Thur, May 5	12:45-2:00	FINAL EXAM Rm. 223	<i>1/4 Cumulative; 3/4 from last portion of the semester</i>		

\* To receive credit for in-class exercises, you MUST be present in class.